

SERVICE MANUAL

INTEGRATED AMPLIFIER

SANSUI AU-G77X



CAUTION

1. Parts identified by the Δ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

•SPECIFICATIONS

Power output

Min. RMS, both channels driven, from 20 to 20,000 Hz, with no more than 0.003% total harmonic distortion.

110 watts per channel into 8 ohms.

Load impedance..... 8 ohms

Total harmonic distortion

..... less than 0.003% at or below rated min. RMS power output

Intermodulation distortion

(60 Hz: 7 kHz = 4:1 SMPTE method)

..... less than 0.003% at rated power output

Frequency response (at 1 watt)

Overall (from AUX)..... DC to 200,000 Hz, +0 dB
-3.0 dB

RIAA curve deviation (DISC-MM, 20 Hz to 20 kHz)

+0.2 dB, -0.2 dB

Input sensitivity and impedance (at 1 kHz)

DISC-MC..... 120 μ V/10 ohms

DISC-MM..... 2.5 mV/47 kohms

(Max. input capability; 200 mV at 1 kHz, less than 0.01% total harmonic distortion)

DISC-CD..... 150 mV/47 kohms

AUX, TUNER, TAPE PLAY-1, 2

..... 150 mV/47 kohms

Output level (1,000 Hz)

TAPE REC-1, 2..... 150 mV into 47 kohms

Signal to noise ratio (short-circuit, A-network)

DISC-MC..... 80 dB

DISC-MM..... 85 dB

AUX, TUNER, TAPE PLAY-1, 2

..... 105 dB

Controls

SUPER BASS..... \pm 10 dB at 100 Hz

BASS..... \pm 10 dB at 330 Hz

MID..... \pm 10 dB at 1 kHz

MID.HIGH..... \pm 10 dB at 3.3 kHz

TREBLE..... \pm 10 dB at 10 kHz

Filter

LOW..... -3 dB at 16 Hz (6 dB/oct)

HIGH..... -3 dB at 20 kHz (6 dB/oct)

LOUDNESS

+10 dB at 50 Hz

+6 dB at 10 kHz

(VOLUME: -30 dB position)

Power requirements

Power voltage..... 120/220/240 V (50/60 Hz)

For U.S.A. & Canada

..... 120 V (60 Hz)

Power consumption... 390 watts 460 VA Rated

560 watts Maximum

Dimensions

430 mm (16-15/16") W

145 mm (5-3/4") H

333 mm (13-1/8") D

Weight

11.7 kg (25.8 lbs) net

13.0 kg (28.7 lbs) packed

* Design and specifications subject to changes without notice for improvements.

* Due to local laws and regulations, this unit sold in some areas are not equipped with variable voltage selectors.

Sansui

SANSUI ELECTRIC CO., LTD.

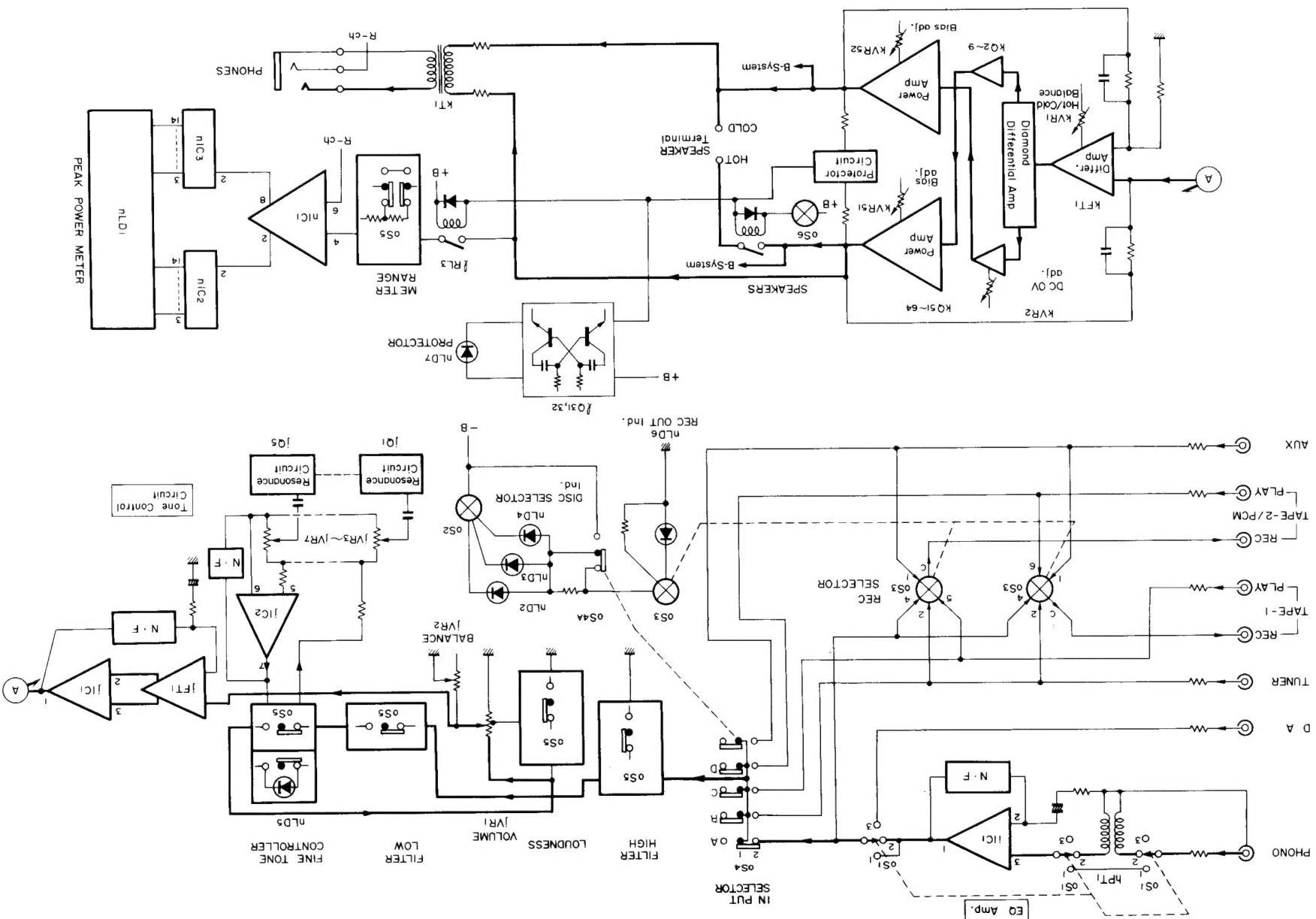
CAUTION

1. The symbols, UL, CSA, SA, BS, UK, EU, AS and XX (EXPORT) on the parts list and the schematic diagram mean followings respectively.
UL..... Manufactured for U.S.A market.
(Underwriters Laboratories approved model.)
CSA Manufactured for Canadian market.
SA..... Manufactured for South African market.
BS, UK Manufactured for United Kingdom market.
EU Manufactured for European market.
AS..... Manufactured for Australian market.
XX (EXPORT) Standard Version.
NON MARK Common Parts.
2. Some printed circuit boards are not supplied as the assembled.
To separate these in this service manual, the stock No's are not indicated at the ends of the board names. However, the individual parts on the circuit boards are provided by orders.
3. Since some of capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors & resistors, which was issued on February 1983.
4. Abbreviations in this service manual are as follows.

• Abbreviations List

C.R.	: Carbon Resistor	E.B.L.	: Low Leak Bi-Polar
S.R.	: Solid Resistor		Electrolytic Capacitor
Ce.R.	: Cement Resistor	Ta.C.	: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C.	: Film Capacitor
F.R.	: Fusing Resistor	M.P.	: Metalized Paper Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C.	: Polystyrene Capacitor
A.R.	: Array Resistor	G.C.	: Gimmic Capacitor
C.C.	: Ceramic Capacitor	A.C.	: Array Capacitor
C.T.	: Ceramic Capacitor,	V.R.	: Variable Resistor
	Temperature Compensation	S.V.R.	: Semi Variable Resistor
E.C.	: Electrolytic Capacitor	SW.	: Switch
E.L.	: Low Leak Electrolytic	Chip R.	: Chip Resistor
	Capacitor	Chip C.	: Chip Capacitor
E.B.	: Bi-Polar Electrolytic		
	Capacitor		

1. BLOCK DIAGRAM



2. ADJUSTMENTS (See Top View on page 8)

2-1. Driver Circuit Adjustment

- Note:**
- 1) Master Volume Minimum
 - 2) Room Temperature ... 18°C ~ 28°C (65°F ~ 83°F)
 - 3) Before turning ON power switch, set kVR1 on F-4264 and F-4265 to center position.
 - 4) Before turning ON power switch, set kVR51 and kVR52 on F-4295 fully counterclockwise.
 - 5) For adjustment, run the unit for more than 20 minutes after the power is switched on.
 - 6) This bias current adjustment converts current value into voltage by ohms law.

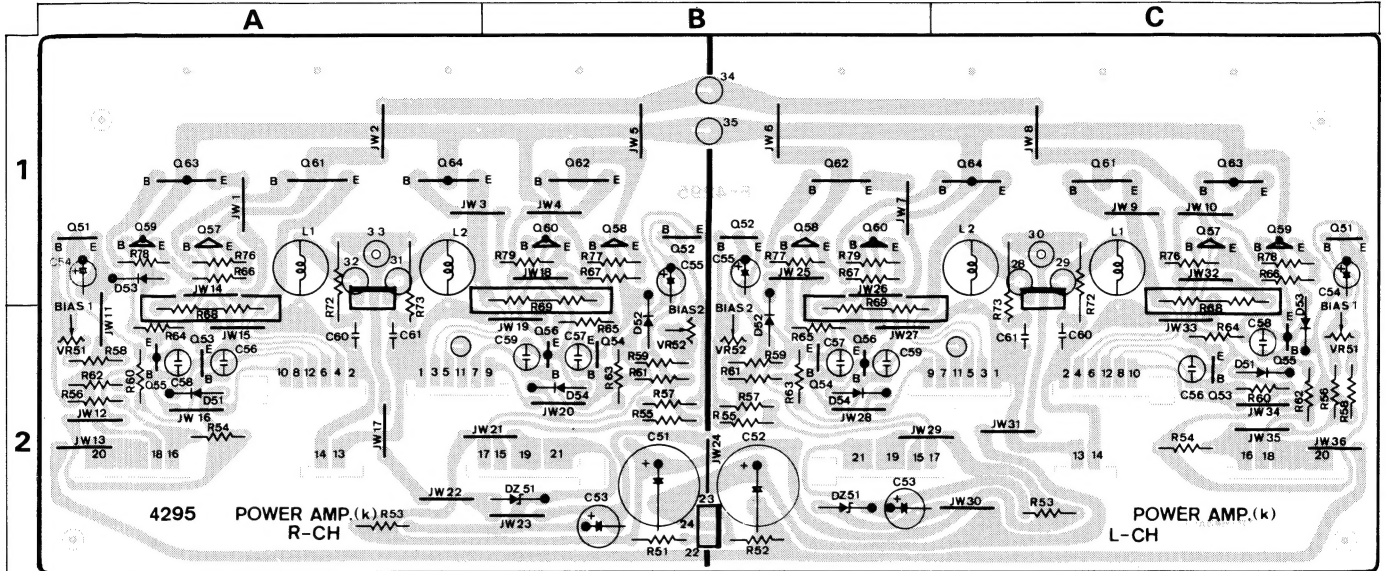
STEP	SUBJECT	MEASURE OUTPUT	ADJUST	ADJUST FOR
1.	Hot/Cold Balance Adj. L-CH	Speaker Terminal (L-ch)	kVR1, L-ch (F-4264)	DC 0V ± 5mV
2.	Hot/Cold Balance Adj. R-CH	Speaker Terminal (R-ch)	kVR1, R-ch (F-4265)	DC 0V ± 5mV
3.	DC 0V Adj. L-CH	Between hot side speaker terminal & earth.	kVR2, L-ch (F-4264)	DC 0V ± 5mV
4.	DC 0V Adj. R-CH	Between hot side speaker terminal & earth.	kVR2, R-ch (F-4265)	DC 0V ± 5mV
5.	Bias Current Adj. L-CH (HOT Side Amp.)	Between emitters of power transistors (kQ61 & kQ63) (Across kR68)	kVR51, L-ch (F-4295)	DC 30mV ± 3mV
	Bias Current Adj. L-CH (COLD Side Amp.)	Between emitters of power transistors (kQ62 & kQ64) (Across kR69)	kVR52, L-ch (F-4295)	DC 30mV ± 3mV
6.	Bias Current Adj. R-CH (HOT Side Amp.)	Between emitters of power transistors (kQ61 & kQ63) (Across kR68)	kVR51, R-ch (F-4295)	DC 30mV ± 3mV
	Bias Current Adj. R-CH (COLD Side Amp.)	Between emitters or power transistors (kQ62 & kQ64) (Across kR69)	kVR52, R-ch (F-4295)	DC 30mV ± 3mV

Note: Repeat procedures as stated in subject in step 1 ~ 4.

3. PARTS LOCATION & PARTS LIST

3-1. F-4295 Power Amp. Circuit Board (Stock No. 00767801)

Component Side



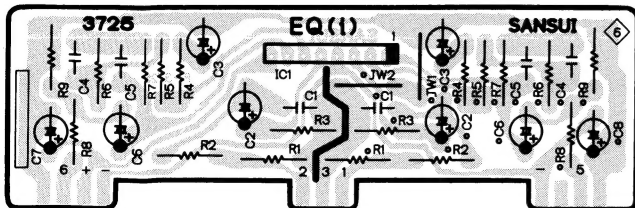
Parts List

Parts No.	Stock No.	Description
• Transistor		
kQ51	03067401	2SC1845
kQ52	03067401	2SC1845
kQ53	07208701	2SC2705
kQ54	07208701	2SC2705
kQ55	07208801	2SA1145
kQ56	07208801	2SA1145
kQ57	46728901	2SC3298
△ kQ58	46728901	2SC3298
kQ59	46728801	2SA1306
kQ60	46728801	2SA1306
△ kQ61	46729701	2SC3284
△ kQ62	46729701	2SC3284
△ kQ63	46729601	2SA1303
△ kQ64	46729601	2SA1303
• Diode		
kD51	46727900	1S2091
kD52	46727900	1S2091
kD53	46727900	1S2091
kD54	46727900	1S2091

Parts No.	Stock No.	Description
• Zener Diode		
kDZ51	03171500	RD22FB
△ kR51	46228600	47Ω 1/2W N.I.R.
△ kR52	46228600	47Ω 1/2W N.I.R.
△ kR53	46230100	820Ω 1/2W N.I.R.
△ kR64	46229800	470Ω 1/2W N.I.R.
△ kR65	46229800	470Ω 1/2W N.I.R.
△ kR66	46229100	120Ω 1/2W N.I.R.
△ kR67	46229100	120Ω 1/2W N.I.R.
△ kR68	46644900	0.33Ω × 2 5W Ce.R.
△ kR69	46644900	0.33Ω × 2 5W Ce.R.
kC60	46281300	0.047μF 50V F.C.
kC61	46281300	0.047μF 50V F.C.
kL1	46851900	Inductor
or 46851901		Inductor
kL2	46851900	Inductor
or 46851901		Inductor
kVR51	46738400	1kΩ S.V.R., Bias adj.
kVR52	46738400	1kΩ S.V.R., Bias adj.

3-2. F-3725 EQ Amp. Circuit Board (Stock No. 00695501)

Component Side

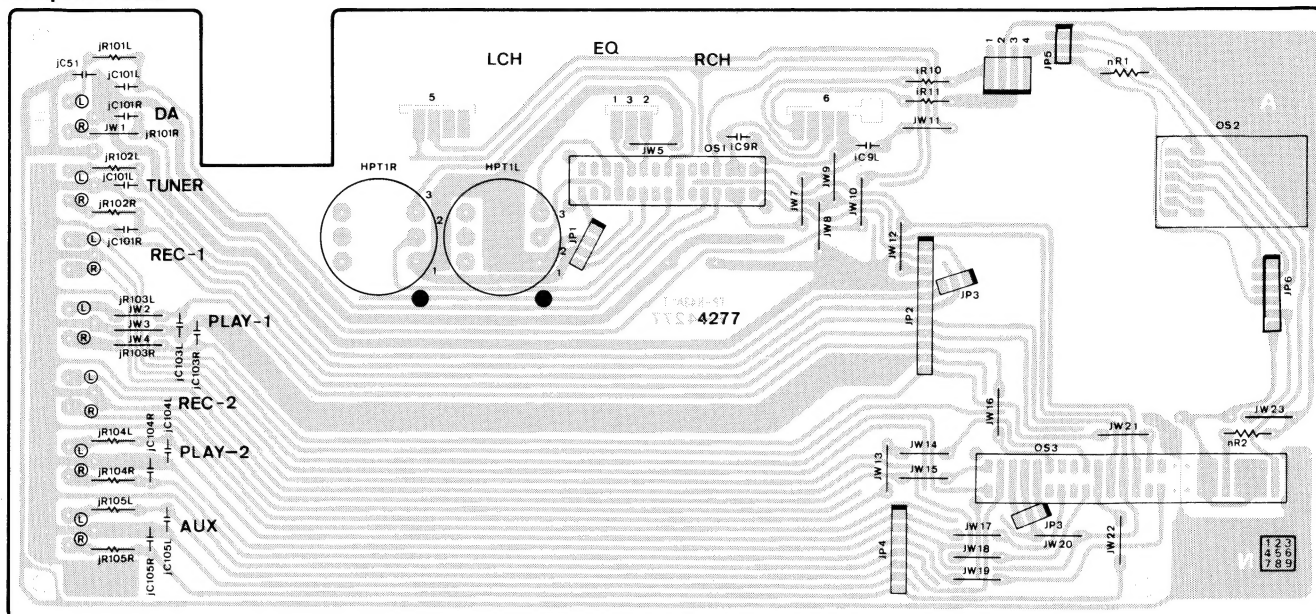


Parts List

Parts No.	Stock No.	Description
• IC		
iIC1	46078900	M5218L

3-3. F-4277 INPUT SELECTOR Circuit Board

Component Side



Parts List

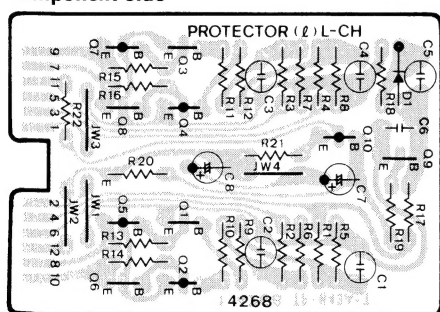
Parts No.	Stock No.	Description
hPT1	46939400	MC Head Transformer
•Zener Diode nD222	46103000 or 46103000 or 46804400 or 46804500	05Z10-X 05Z10-Y RD10E-B2 RD10E-B3
△iR10	46229000	100Ω 1/2W N.I.R.
△iR11	46229000	100Ω 1/2W N.I.R.

Parts No.	Stock No.	Description
△nR1	08924200	1.2kΩ 1/2W N.I.R.
△nR2	08924100	1kΩ 1/2W N.I.R.
△nR3	03924100	1kΩ 1/2W N.I.R.
oS1	46731600	Slide SW., DISC SELECTOR
oS2	46731700	Rotary SW., DISC SELECTOR Ind.
oS3	46730500	Slide Rotary SW., REC SELECTOR
	46438100	2P Terminal Board, TAPE-1, TUNER, DISC
	46363900	6P Terminal Board, TAPE-2/PCM, AUX

3-4. F-4268 Protector (L-ch) Circuit Board

Component Side

(Stock No. 00766001)



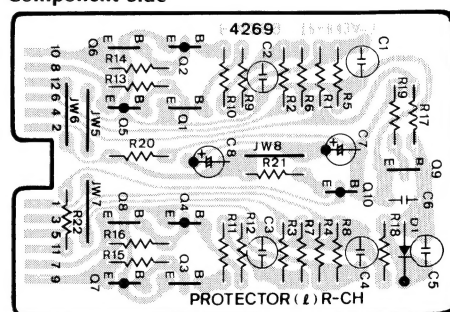
Parts List

Parts No.	Stock No.	Description
•Transistor		
IQ1	46367101	2SC2603
IQ2	46367001	2SA1115
IQ5	46367001	2SA1115
IQ6	46367101	2SC2603
IQ9	46367101	2SC2603
IQ10	46367001	2SA1115
•Diode		
ID1	03117600 or 46086000	1S2473T77 1S1588TP-3
IC6	46283300	0.022μF 50V F.C.

3-5. F-4269 Protector (R-ch) Circuit Board

Component Side

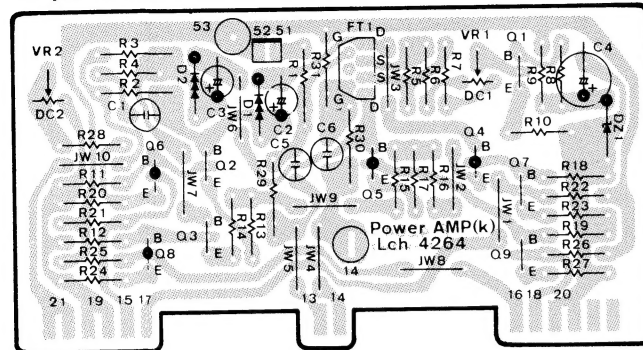
(Stock No. 00766101)



Parts List

Parts No.	Stock No.	Description
•Transistor		
IQ1	46367101	2SC2603
IQ2	46367001	2SA1115
IQ5	46367001	2SA1115
IQ6	46367101	2SC2603
IQ9	46367101	2SC2603
IQ10	46367001	2SA1115
•Diode		
ID1	03117600 or 46086000	1S2473T77 1S1588TP-3
IC6	46283300	0.022μF 50V F.C.

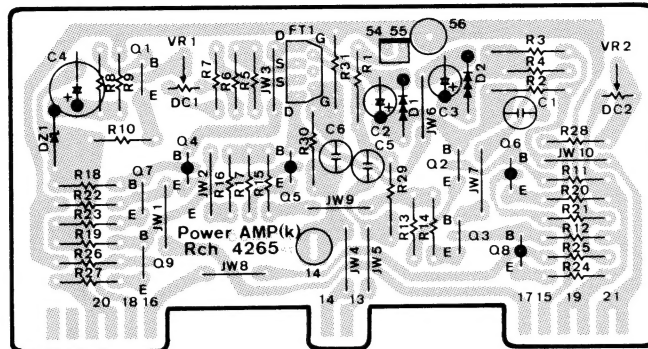
3-6. F-4264 Driver Amp. (L-ch) Circuit Board
(Stock No. 00765801)
Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
KQ1	46581701	2SC1845
KQ2	46581701	2SC1845
KQ3	46581701	2SC1845
KQ4	46581601	2SA992
KQ5	46581601	2SA992
KQ6	46728201	2SA1145
KQ7	46728301	2SC2705
KQ8	46728201	2SA1145
KQ9	46728301	2SC2705
•FET		
KFT1	46723601 or 46723602	2SK389-BL 2SK389-V
•Varistor		
KD1	03401700	MV103
KD2	03401700	MV103
•Zener Diode		
KDZ1	03179000	RD13E-B
KVR1	46737800	100Ω S.V.R., Hot/Cold Balance adj.
KVR2	46737900	470Ω S.V.R., DC 0V adj.

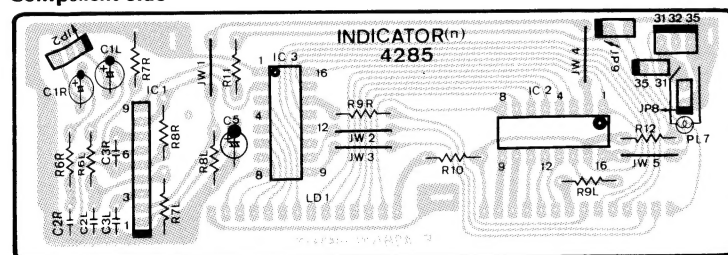
3-7. F-4265 Driver Amp. (R-ch) Circuit Board
(Stock No. 00765901)
Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
KQ1	46581701	2SC1845
KQ2	46581701	2SC1845
KQ3	46581701	2SC1845
KQ4	46581601	2SA992
KQ5	46581601	2SA992
KQ6	46728201	2SA1145
KQ7	46728301	2SC2705
KQ8	46728201	2SA1145
KQ9	46728301	2SC2705
•FET		
KFT1	46723601 or 46723602	2SK389-BL 2SK389-V
•Varistor		
KD1	03401700	MV103
KD2	03401700	MV103
•Zener Diode		
KDZ1	03179000	RD13E-B
KVR1	46737800	100Ω S.V.R., Hot/Cold Balance adj.
KVR2	46737900	470Ω S.V.R., DC 0V adj.

3-8. F-4285 Peak Power Meter Circuit Board (Stock No. 00767001)
Component Side

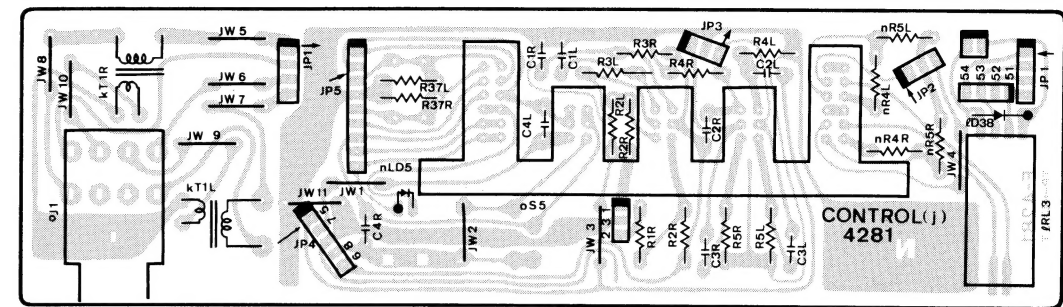


Parts List

Parts No.	Stock No.	Description
nIC1	03610000	TA7318P
nIC2	46254700	HA12010
nIC3	46254700	HA12010
•Zener Diode		
nD1	46828700 or 46828800 or 46115000 or 46115100	RD18E RD18E 05Z18 05Z18

Parts No.	Stock No.	Description
nLD1	46705300	FL. Display Tube FG24SL6GR, PEAK POWER METER
nR15	00180100	15Ω 1W N.I.R.
nR16	00180100	15Ω 1W N.I.R.

3-9. F-4281 Control Amp. Circuit Board (Stock No. 00766601)
Component Side

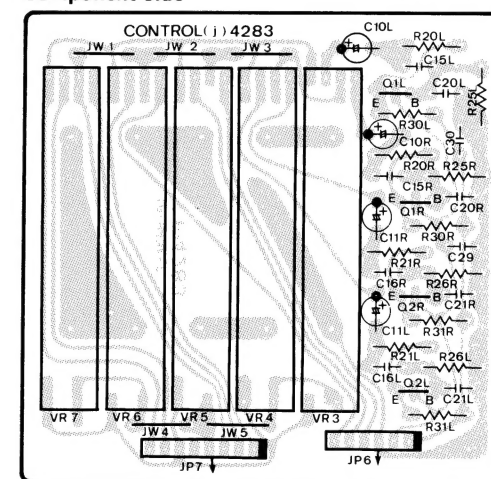


Parts List

Parts No.	Stock No.	Description
jC1	46282400	3300μF 50V F.C.
KT1	46841800	OUTPUT Transformer, PHONES
•Diode		
ID38	03117600 or 46086000	1S2473T77 1S1588TP-3
kR82	46228400	33Ω 1/2W N.I.R.
IRL3	11504300 or 11504301	Relay Relay (LA2A-24B)

Parts No.	Stock No.	Description
•LED		
nLD5	03193700	SEL1110S, FINE TONE CONTROLLER
oS5	46736900	Push SW., TONE, FILTERS, LOUDNESS, METER RANGE
oJ1	46078200	Jack, PHONES

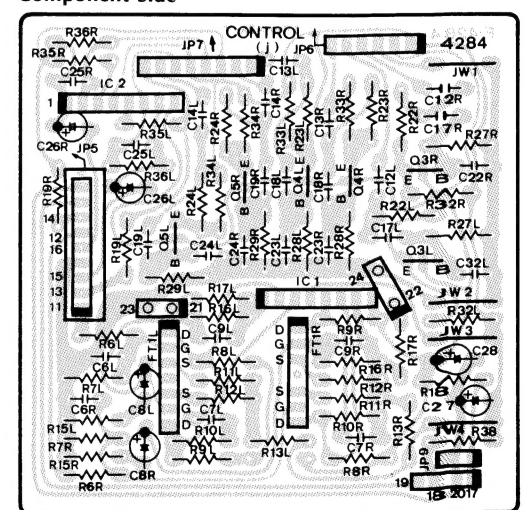
3-10. F-4283 Graphic EQ. Volume Circuit Board
(Stock No. 00766801)
Component Side



Parts List

Parts No.	Stock No.	Description
•Transistor		
jQ1	46367101	2SC2603
jQ2	46367101	2SC2603
jC15	46281400 or 46283800	0.056μF 50V F.C. 0.056μF 50V F.C.
jVR3	46736700	50kΩ Slide V.R., SUPER BASS
jVR4	46736700	50kΩ Slide V.R., BASS
jVR5	46736700	50kΩ Slide V.R., MID.
jVR6	46736700	50kΩ Slide V.R., MID. HIGH
jVR7	46736700	50kΩ Slide V.R., TREBLE

3-11. F-4284 Graphic EQ. Circuit Board
(Stock No. 00766901)
Component Side

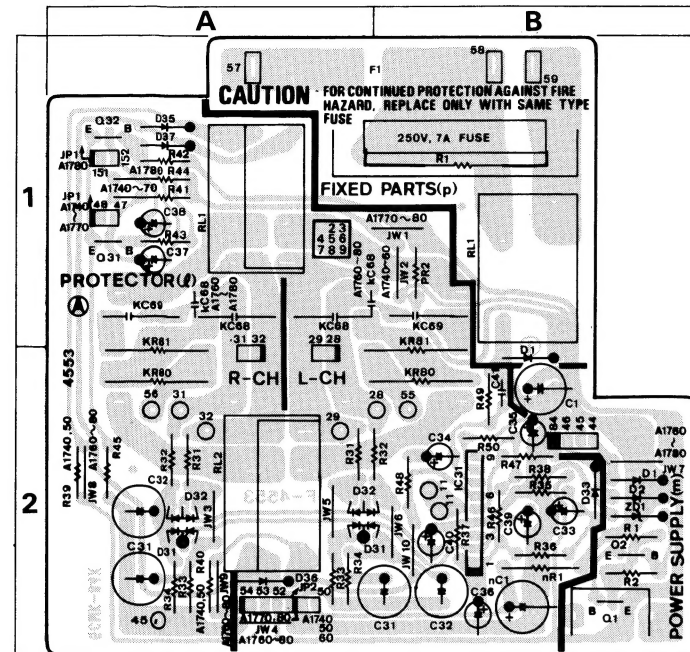


Parts List

Parts No.	Stock No.	Description
•Transistor		
jQ3	46367101	2SC2603
jQ4	46367101	2SC2603
jQ5	46367101	2SC2603
•FET		
jFT1	07110000 or 07110001	UPA68H-L UPA68H-M
•IC		
jIC1	46579100	M5291L
jIC2	46078900	M5218L
jR18	46228600	47Ω 1/2W N.I.R.
jR38	46228600	47Ω 1/2W N.I.R.

3-12. F-4553 Protector Relay Circuit Board (Stock No. 00818501)

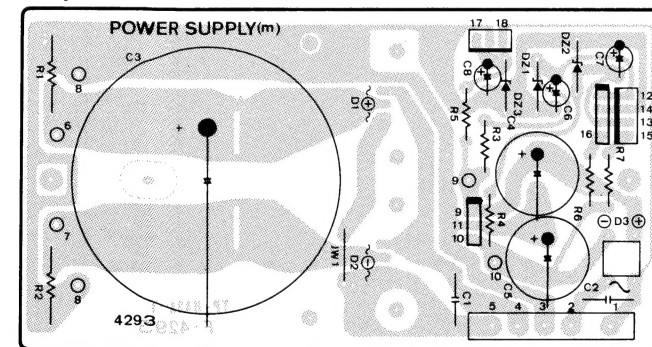
Component Side



Parts No.	Stock No.	Description
△ KR80	00185500	10Ω 2W N.I.R.
△ KR81	00185500	10Ω 2W N.I.R.
KC68	46281300	0.047μF 50V P.F.
KC69	46281300	0.047μF 50V P.F.
• Transistor		
IQ31	07194801	2SC1815
IQ32	07194801	2SC1815
• IC		
IIC1	46207600	TA7317P
• Diode		
ID31	46463900	MC921
ID32	46463700	MC911
ID33	03117700	10E-2
ID35	03117700	10E-2
ID36	03117700	10E-2
ID37	07176400	1S2473H
	or 03111800	1S1588
IC31	08460800	100μF 10V E.B.
IC32	08460800	100μF 10V E.B.
△ IR44	00180800	1.8kΩ 1W N.I.R.
IRL1	46737700	Relay
IRL2	46737700	Relay
	07203600	8P Terminal Board, SPEAKERS

3-13. F-4293 Power Supply Circuit Board

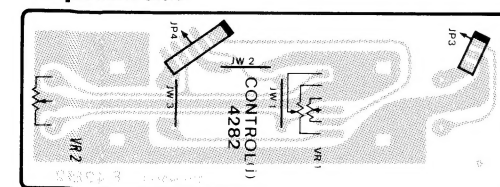
Component Side



Parts No.	Stock No.	Description
• Diode		
△ mD1	46731500	CTP21S
△ mD2	46731400	CTP21R
△ mD3	46273600	DBB10-B

3-14. F-4282 Volume Circuit Board

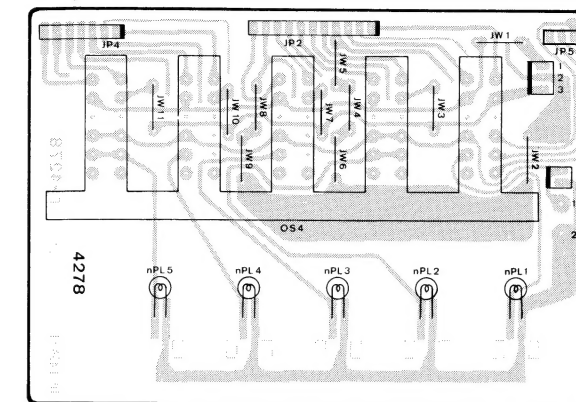
Component Side



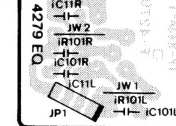
Parts No.	Stock No.	Description
jVR1	46730800	150kΩ(B) V.R., VOLUME
jVR2	46730900	250kΩ V.R., BALANCE

3-15. F-4278 INPUT SELECTOR SW. Board

Component Side

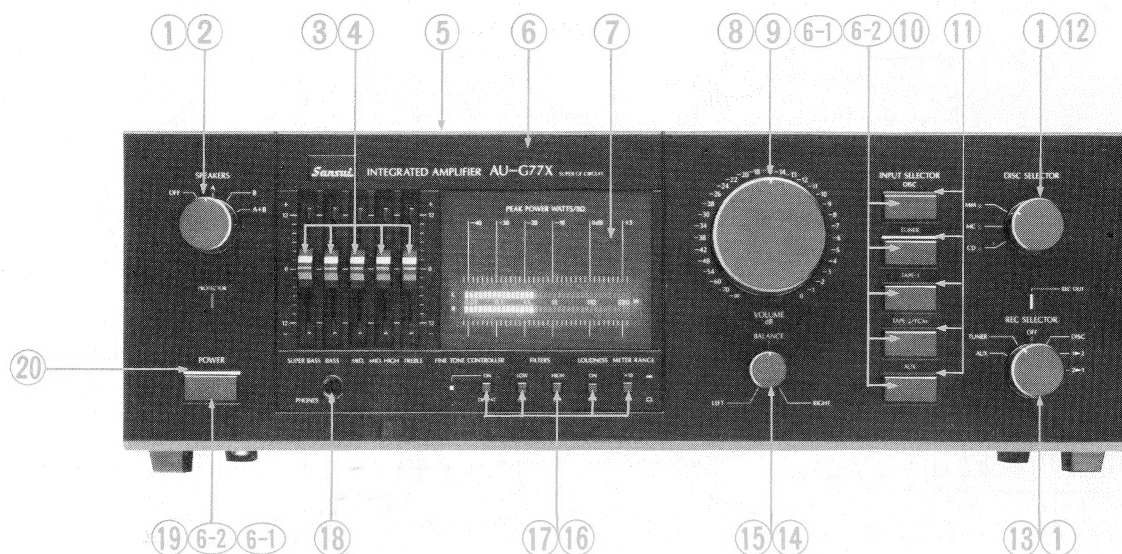


Component Side

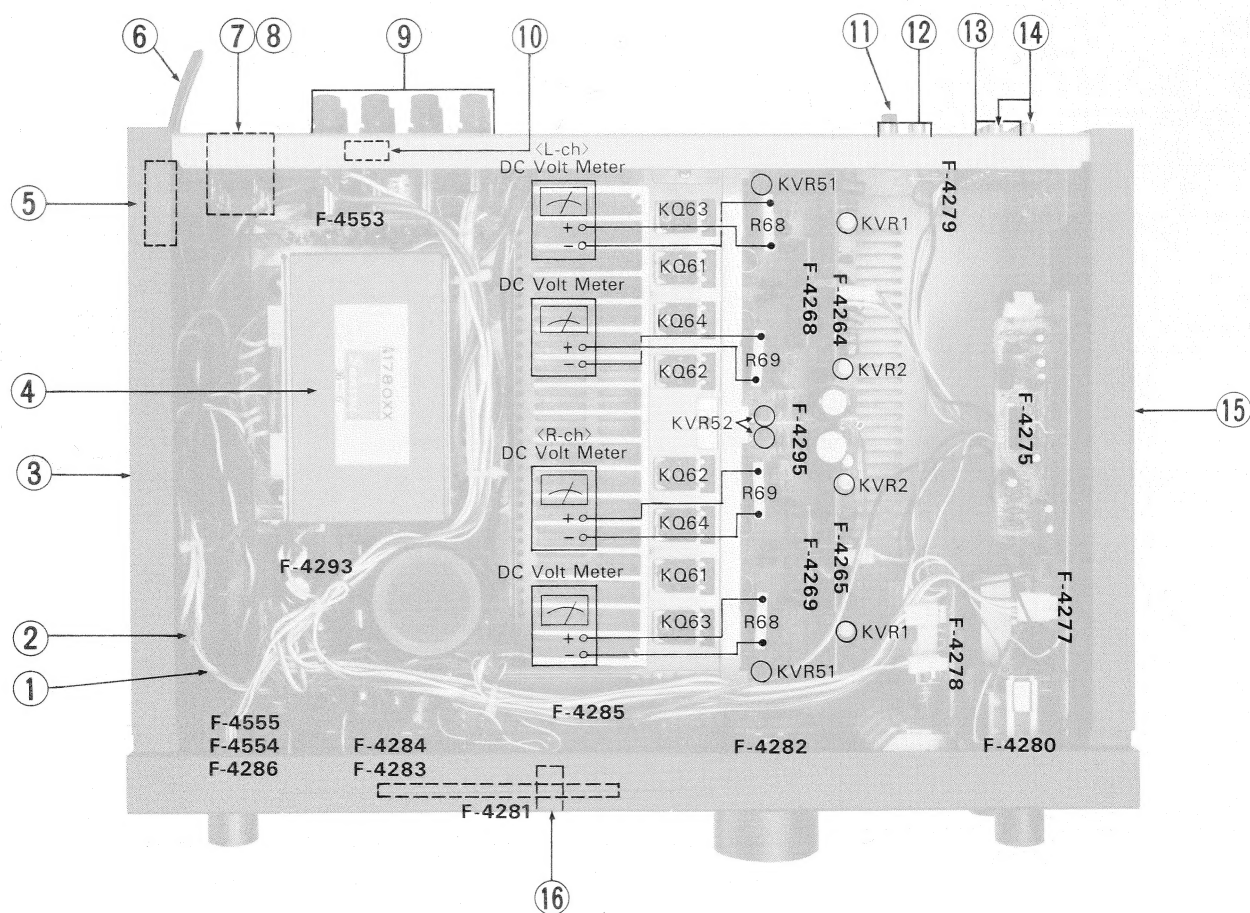


4. OTHER PARTS

4-1. Front View



4-2. Top View



Parts List <Front View>

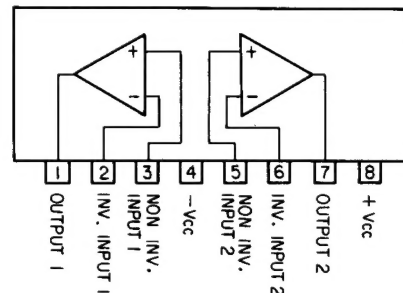
Parts No.	Stock No.	Description
1	47298100	Knob, SPEAKERS, DISC SELECTOR, REC SELECTOR
2	46730700	Rotary SW., SPEAKERS
3	47348100	Knob, TONE CONTROLLER
4	46736700	Slide VR., TONE CONTROLLER
5	47299800	Bonnet
6	47630600	Front Panel Ass'y
6-1	47324100	Knob, INPUT SELECTOR, POWER
6-2	47046700	Spring, INPUT SELECTOR Knob, POWER Knob
7	46705300	FL Display Tube
8	47630300	Knob, VOLUME
9	46730800	150k Ω (B) V.R., VOLUME
10	46737000	Push SW., INPUT SELECTOR
11	46730100	Pilot Lamp 8V 0.1A
12	46731700	Rotary SW., DISC SELECTOR
13	46731600	Slide Rotary SW., REC SELECTOR
14	47297700	Knob, BALANCE
15	46730900	250k Ω VR., BALANCE
16	07917300	Knob, FINE TONE CONTROLLER, FILTERS, LOUDNESS, METER RANGE
17	46736900	Push SW., FINE TONE CONTROLLER, FILTER, LOUDNESS, METER RANGE
18	46078200	Jack, PHONES
19	46546900	Push SW., POWER (XX,UL,CSA)
20	46364300	Push SW., POWER (EU)
	46834500	Pilot Lamp 8V 0.05A

Parts List <Top View>

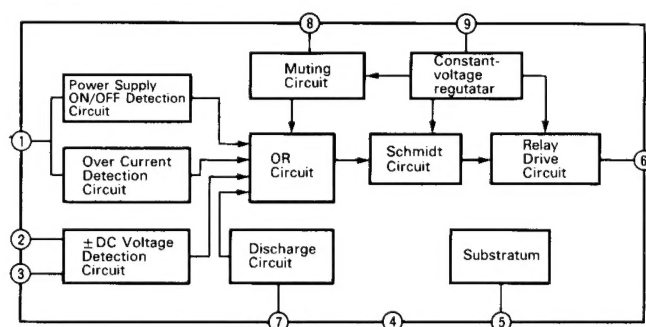
Parts No.	Stock No.	Description
1	47311300	Joint Shaft
2	07189400	Fuse 8A 250V (XX,UL,CSA)
	07189000	Fuse 4A 250V (XX)
	07185200	Fuse 3.15A 250V (EU)
3	47429000	Side Panel (L)
4	15014111	Power Transformer (XX)
	15014112	Power Transformer (UL,CSA)
	15014115	Power Transformer (EU)
5	47157300	AC Cord Cover
6	38004700	Power Supply Cord (XX,UL)
	46321000	Power Supply Cord (CSA)
	46128900	Power Supply Cord (EU)
7	46730400	AC OUTLET (XX,UL,CSA)
	46161000	AC OUTLET (EU)
8	07204700	Slide SW., Voltage Selector (EU)
9	07203600	8P Terminal Board, SPEAKERS
10	46739400	Slide SW., SPEAKER IMPEDANCE (XX,EU)
	46736600	Slide SW., SPEAKER IMPEDANCE (UL,CSA)
11	22301510	GND Terminal
12	46736500	2P INPUT Terminal DISC, MM/MC
13	46363900	6P Terminal, TUNER, TAPE-1, TAPE-2, AUX
14	46438100	2P INPUT Terminal DISC, DA
15	47429100	Side Panel (R)
16	48073100	Pilot Lamp 8V 0.15A

5. INTERIOR BLOCK DIAGRAM OF IC

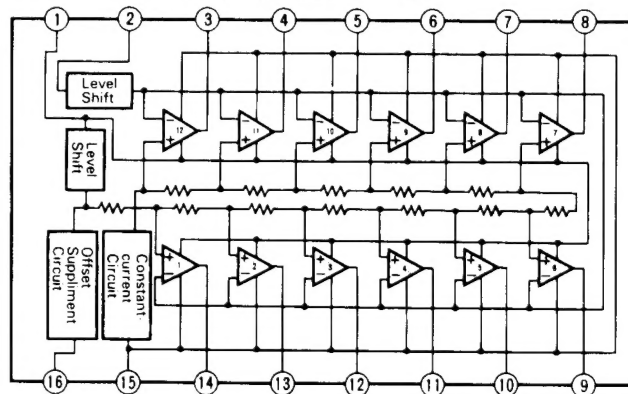
•M5218L, M5219L (Audio Pre Amp. IC)



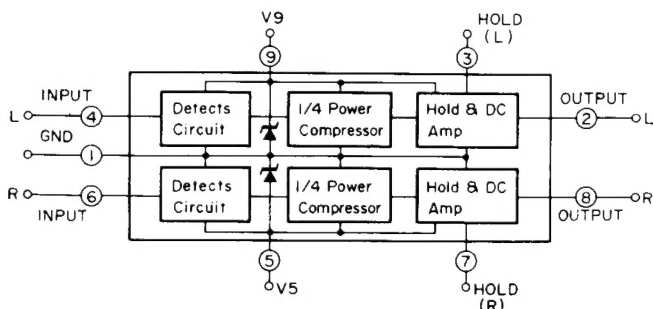
•TA7317P (Speaker Protector IC)



•HA12010 (FL Display Tube Drive)



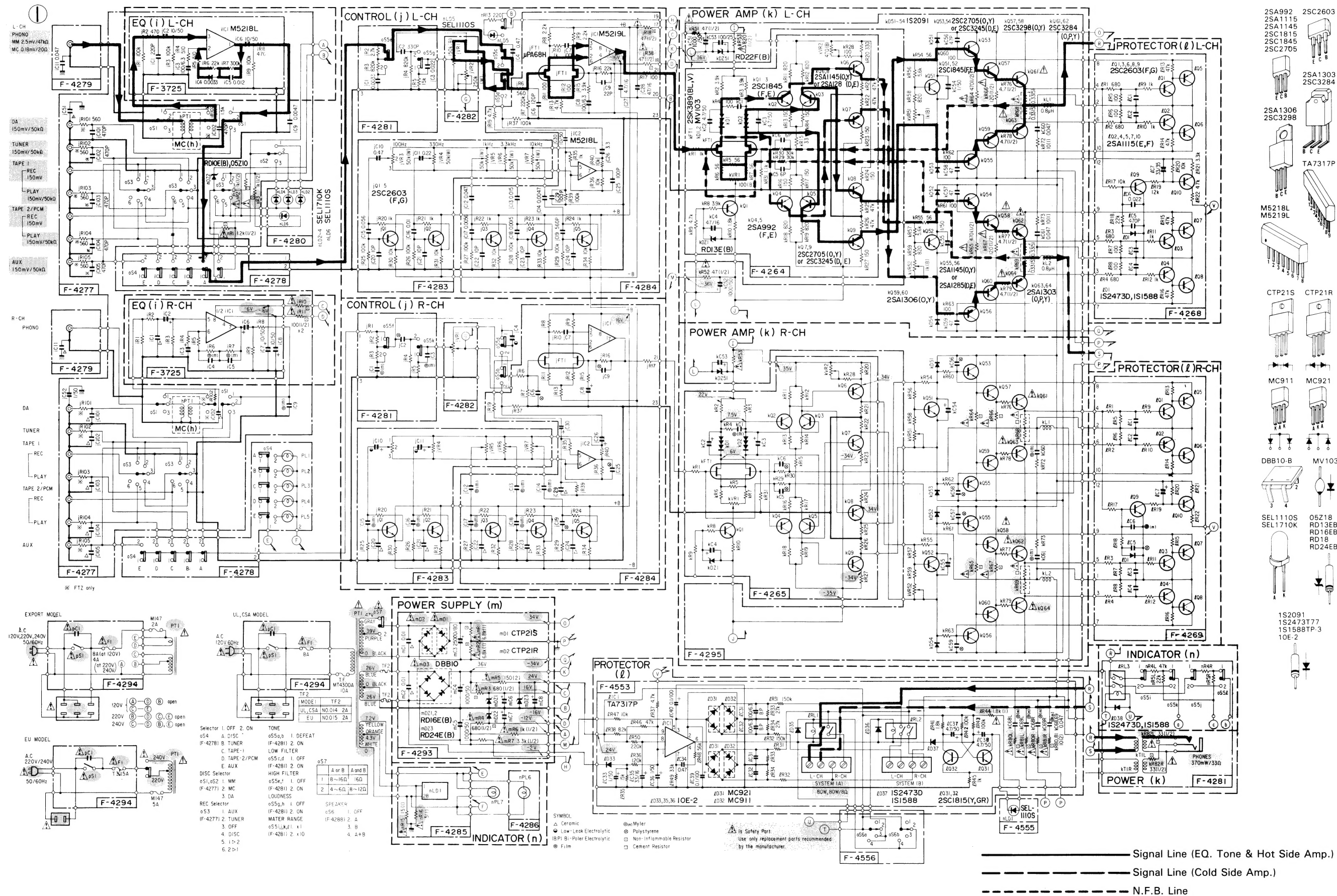
•TA7318P (Meter Drive IC)



6. SCHEMATIC DIAGRAM

6-1. Amplifier Section

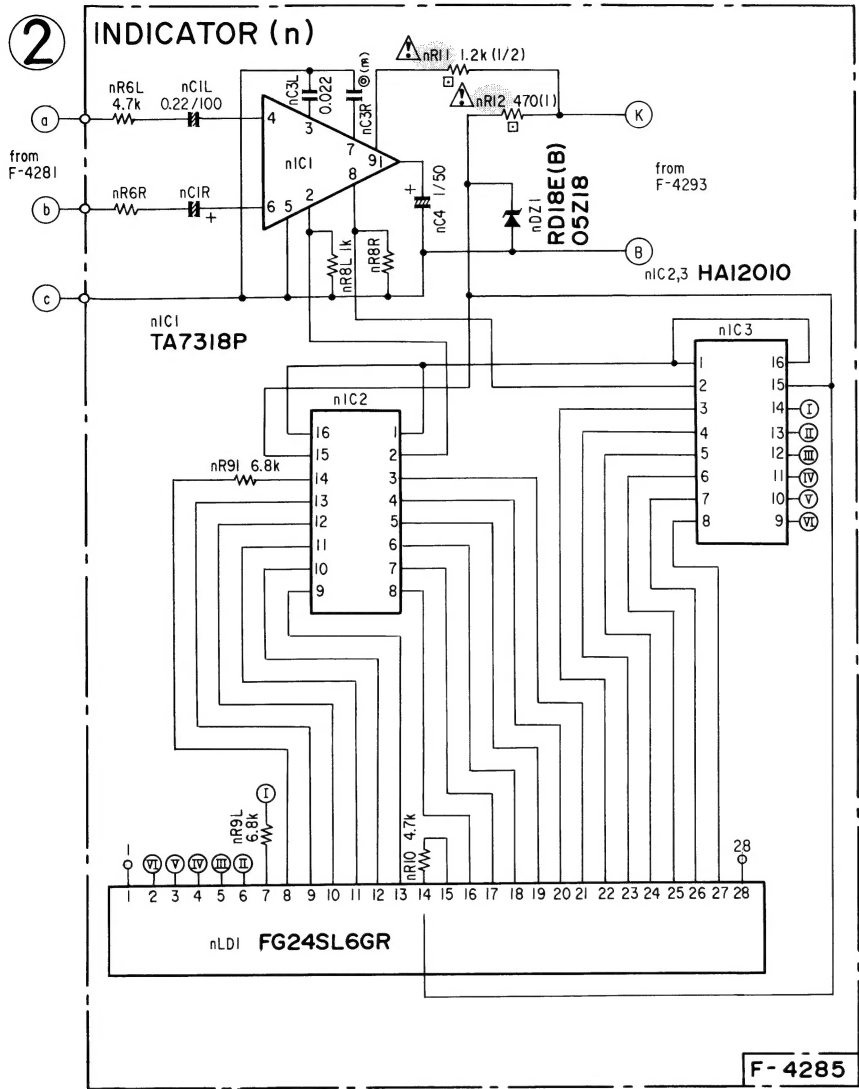
* Design and specifications subject to change without notice for improvement.
 * La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 * Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



A	B	C	D
---	---	---	---

6-2. Peak Power Meter Section

*Design and specifications subject to change without notice for improvement.
 *La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
 *Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.



- 2SA992
2SA1115
2SA1145
2SC1815
2SC1845
2SC2705

2SC2603
2SA1303
2SC3284
2SA1306
2SC3298

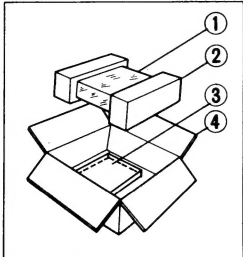
CTP21S
CTP21R
MC911
MC921
TA7317P
DBB10-B
MV103
SEL1110S
SEL1710K

M5218L
M5219L

05Z18
RD13EB
RD16EB
RD18
RD24EB
1S2091
1S2473T77
1S1588TP-3
10E-2

7. PACKING LIST

Parts No.	Stock No.	Description
1	47299000	Vinyl Bag
2	47287600	Styrofoam Packing
3	47607510	Styrofoam Packing (bottom)
4	47630500	Carton Case



8. ACCESSORY LIST

Stock No.	Description
46961100	Operating Instruction

AU-G77X

Sansui

SANSUI ELECTRIC CO., LTD.:

SANSUI ELECTRONICS CORPORATION:

SANSUI ELECTRONICS (U.K.) LTD.:
SANSUI ELECTRONICS G.M.B.H.:

14-1, Izumi 2-chome, Suginami-ku, Tokyo 168 Japan
PHONE: 1031 324-8891/TELEX: 232-2076 (International Division)
1250 Valley Brook Ave. Lyndhurst, N.J. 07071 U.S.A.
17150 South Margay Ave. Carson, California 90746 U.S.A.
3036 Koapaka Street, Honolulu, Hawaii 96819 U.S.A.
Unit 10A, Lyon Industrial Estate, Rockwate Avenue, Geelford, Middx UB8 3AA, England
Pau Ehrich-Strasse 8, 6074 Rödermark 2, West Germany

(SM1-185)

Printed in Japan (740420M) <Stock No. 36499000>